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# UNITED STATES PATENT AND TRADEMARK OFFICE

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| 10/511,542 | 10/18/2004 | Juha-Pekka Koskinen | 47092.00099 | 2311 |

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| ART UNIT | PAPER NUMBER |
|---|---|
| 2686 | |

DATE MAILED: 10/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | Application No. | Applicant(s) |
|---|---|---|---|
| **Office Action Summary** | | 10/511,542 | KOSKINEN ET AL. |
| | | Examiner | Art Unit |
| | | Charles N. Appiah | 2686 |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)☒ Responsive to communication(s) filed on <u>18 October 2004</u>.

2a)☐ This action is **FINAL**.          2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4)☒ Claim(s) <u>39-76</u> is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>39,43-48,55-69, 73-76</u> is/are rejected.

7)☒ Claim(s) <u>40-42,49-54 and 70-72</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

## Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All   b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>10/18/04</u>.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____ .

## Information Disclosure Statement

1.      The information disclosure statement (IDS) submitted on 18 October 2004 is in

compliance with the provisions of 37 CFR 1.97. Accordingly, the examiner has

considered the information disclosure statement.

## Claim Objections

2.      Claims 39, 40 and 62 are objected to because of the following informalities:

In claims 39 and 62, the word "registrating" appearing in several instances

throughout the claims should be changed to "registering" to correct an apparent

typographical error in the claims.

On line 6, of claim 39, the word "rom" should be deleted and replaced by "from"

Appropriate correction is required.

      Claim 40 cannot depend on cancelled claim 1. Examiner is considering claim 40 as

being dependent on claim 39. Appropriate correction is required.

## Claim Rejections - 35 USC § 112

3.      Claim 49 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite

for failing to particularly point out and distinctly claim the subject matter which applicant

regards as the invention.

Regarding claim 59, the recitation of the limitation "said control network session"

lacks clear antecedent basis in the claim. It appears claim 59 should depend on claim

58, instead of claim 49.

### Claim Rejections - 35 USC § 103

4.      The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5.      Claims 39, 43-48, 55-57, 59-68, 73 and 74 are rejected under 35 U.S.C. 103(a)

as being unpatentable over **Hakala et al. (US 2001/0024950)** in view of **Lundstrom**

**(6,650,776).**

Regarding claims 39 and 62 Hakala discloses a method and a network system

for charging an account related to a terminal device of a subscriber to a first data

network for a network session rendered to the terminal device when roaming in a

second data network, comprising the steps of: registering the terminal device to the

second data network (see page 1, 0006), transmitting a network address of a first

charging system related to the first data network from the first data network to the

second data network (see page 1, 0008), assessing in the second data network first

charge information about the network session (see page 1, 0009), transmitting the

assessed charge information from the second data network to the network address of

the first charging system (transfer of CDRs to the billing system address, see page 1,

0010) and calculating a charge for the network session at the first charging system

using the incoming first charge information (see page 3, 0037). Hakala fails to teach

wherein the step of transmitting the network address of the first charging system from

the first data network to the second data network is performed before the step of registering the terminal device to the second network.

In an analogous field of endeavor, Lundstrom discloses a method of providing call charge information in a mobile telecommunications system, wherein a set of call charging algorithms are maintained in a home telecommunication network and is periodically transferred to respective foreign networks, which maybe used by the receiving network to calculate call charge information for subscribers of the home network when they are roaming in the foreign networks (see abstract). According to Lundstrom, the charging nodes of foreign networks may regularly poll the rating node of the home network as well as the rating nodes of other networks with, which they have a roaming agreement (see col. 4, lines 25-45, col. 3, lines 17-30 and col. 5, lines 19-24), which clearly meets the feature of transmitting charging system information to the second network prior to registration of a roaming subscriber in the second network.

It would therefore have been obvious to one of ordinary skill in the art to combine Lundstrom's method for providing call charge information to visited networks with Hakala's system in order to provide advice of charge information from a home network in order to enable a call charging node of a foreign network to determine the call tariff for a roaming mobile subscriber.

Regarding claims 43 and 69, Hakala further discloses wherein the first charge information is bearer charge information (see page 3, 0037).

Regarding claim 44, Hakala further discloses wherein the step of assessing a first charge information in the second data network is performed in near real-time or in real-time (see page 3, 0037-0040).

Regarding claim 45, Hakala further discloses wherein the step of transmitting the assessed first charge information from the second data network to the network address of the first charging system is performed in near real-time or in real-time (see page 2, 0036, page 3, 0040-0041).

Regarding claim 46, Hakala further discloses wherein charging the account is performed in near real-time or in real-time (see page 3, 0040).

Regarding claim 47 Hakala's teaching of CDRs being sent over a signaling network, which may be an IP, based network, e.g. an ATM network (see page 1, 0016) reads on the feature of charging the account being performed online.

Regarding claim 48, Hakala further discloses further comprising a step of transmitting subscriber information from the first data network to the second network before the step of establishing the network session (inherent in transfer of address of a billing system from a subscriber register to the serving exchange, see page 1, 0008-0010).

Regarding claim 55, Hakala further discloses wherein the account charged is a prepaid account (see page 3, 0037).

Regarding claim 56, Hakala further discloses wherein the step of calculation of a charge for the network session by the first charging system using the incoming first

charging information and charging the account are performed in real time (see page 3, 0040).

Regarding claim 57, Hakala teaches wherein the networks may be GPRS based (see page 1, 0014), and Lundstrom teaches wherein a charging node of a foreign network can accurately calculate the tariff to be applied to a roaming subscriber (see col. 1, lines62-67), but the combination of Hakala and Lundstrom fail to explicitly teach that the network session is established between the terminal device and a station in a third data network, which station is, regarding the network session, an originating or a terminating station.

However, since it is well known that a roaming terminal or station can initiate or receive a communication in a visiting network, those of ordinary skill in the art would have appreciated the fact that the roaming subscriber can originate or terminate a data communication session to another station in a third data network especially where there exists roaming agreements between different networks as this would generate revenue for the networks involved while allowing communications for subscribers irrespective of the location of the subscribers.

Regarding claim 59, Hakala inherently discloses wherein the first charge information is transmitted   via a control session  (inherent in sending CDRs over signaling network which may be IP based, see page 1, 0016).

Regarding claims 60-61, Hakala further discloses wherein at least one of the data networks is a radio data network and the data networks are packet switched radio data networks (see page 1, 0014, page 3, 0041).

Regarding claim 63, Hakala further teaches transferring generated CDRs from a serving exchange to the billing system of the first network (see page 1, 0008-0011), which inherently reads on in addition, a second-network charging system related to the second network and communicating with the second network assessment system, in which the second network service assessment system is additionally adapted to transmit the first charge information about the network session to the second network charging system, while Lundstrom teaches using periodically transferred algorithms by receiving foreign networks to calculate call charge information for subscribers of the home network when they are roaming in the foreign networks (see 17-23).

Regarding claim 64, Hakala as modified Lundstrom further discloses as taught by an inherent second network session control system adapted to establish and maintain a network session between the first network station and a terminating or an originating second network station (see col. 3, line 67 to col. 4, line 5).

Regarding claim 65, Hakala as modified by Lundstrom further teaches as taught by Lundstrom, performing the transmission of the first charge information from the second-network service assessment system to the first-network charging system, the second-network session control system is additionally adapted to transmit the first charge information to the first-network session control system, and the first network control system is additionally adapted to transmit the received first charge information to the first-network charging system (charging nodes in respective foreign networks to calculate charges for subscribers of the home network roaming in the foreign networks, see col. 3, lines 17-30 and col. 3, line 67 to col. 4, line 8).

Regarding claim 66, Hakala further discloses wherein the first charging system is adapted to transforming balance information related to the first network station, the transformation depending on the balance information and on the incoming first charge information related to the first network station (see page 3, 0037).

Regarding claim 67, Hakala further discloses wherein the first network charging system is adapted to perform the transformation in near real-time or real-time (see page 3, 0037-0040).

Regarding claim 68, Hakala further teaches the second network service assessment system being adapted to assess and transmit in near real-time or real-time the first charge information during a network session to the first charging system using the network address (see page 2, 0036, page 3, 0040).

Regarding claim 73, the combination of Hakala and Lundstrom further discloses as taught by Lundstrom the first charging system being adapted to apply a real-time transformation algorithm to the types of incoming charge information (see col. 2, lines 17-22).

Regarding claim 74, Hakala further discloses wherein the first and second networks are GPRS PLMNs (see page 1, 0013-0014).

6.      Claim 58 is rejected under 35 U.S.C. 103(a) as being unpatentable **over Hakala et al and Lundstrom** as applied to claim 48 above, and further in view of Well-Known Prior Art - (**Official Notice** – See MPEP 2144.01).

Regarding claim 58, the combination of Hakala and Lundstrom fail to teach before the step of establishing the network session between the terminal device in

the second data network and the station in the third data network, a further step of

establishing a control session between the terminal and the station, which control

session is routed through a first network control node related to the first network.

However, examiner maintains that the concept of establishing a control session

between a home network and a visited network for a roaming subscriber prior to the

establishment of a communication session for the roaming subscriber is very known and

expected in the art and as such examiner takes Official Notice that it would have been

obvious to one of ordinary skill in the art to establish a control session between

terminals through the home network of one the terminals in order to verify and ensure

that the visiting terminal is a legitimate subscriber who is entitled to have roaming

privileges  and can communicate in different networks.

7.      Claim 75 and 76 are rejected under 35 U.S.C. 103(a) as being unpatentable over

**Hakala et al and Lundstrom** as applied to claim 73 above, and further in view of

**Ronneke (6,515,989).**

Regarding claims 75-76, Hakala further discloses wherein the network is a

GPRS based network having a GGSN as a serving node and the signaling network over

which the CDRs are sent is an IP based network (see page 1, 0013-0016), but the

combination of Hakala and Lundstrom fail to explicitly teach wherein the second

network control system also comprises a SGSN, a GPRS Internet Protocol backbone

and the second network service assessment is integrated into the SGSN.

In an analogous field of endeavor, Ronneke discloses a system for billing for

a packet data service using GPRS standard wherein the system is designed as a

hierarchical network having multiple levels for managing voice and packet

communications and include a SGSN, a GGSN which provide an interface with an

external IP packet network, wherein SGSN and GGSN functionalities maybe combined

in the same physical node and include a GPRS backbone IP routing functionality and

provide per-packet billing data (see col. 3, line 40 to col. 4, line 31).

It would therefore have been obvious to one of ordinary skill in the art to

provide  the details of the packet service system of Ronneke in the combination of

Hakala and Lundstrom in order to provide real time data billing function, which is

independent of data traffic as taught by Ronneke (see col. 2, lines 10-34).


### *Allowable Subject Matter*

8.      Claims 40-42 would be allowable if rewritten to overcome the objection(s), set

forth in this Office action and to include all of the limitations of the base claim and any

intervening claims.

9.      Claims 49-54, 70, 71 and 72 are objected to as being dependent upon a rejected

base claim, but would be allowable if rewritten in independent form including all of the

limitations of the base claim and any intervening claims.

### *Conclusion*

10.     The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure. Mattila et al. (GB 2 350 017) discloses a system for tariff

determination in mobile communication networks.

Rai et al. (6,377,982) discloses an accounting system for a coupled home data network and a foreign data network.

Stille et al. (6,724,748) discloses a system for an intelligent network and packet data interoperability.

Kikinis (US 2003/0083991) discloses a method for tracking and billing cellular roaming charges via a data packet network.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles N. Appiah whose telephone number is 571 272-7904. The examiner can normally be reached on M-F 7:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on 571 272-7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CA

CHARLES APPIAH
PRIMARY EXAMINER